

# IOOS National Glider Data Assembly Center: Embracing FAIR Data Standards

Kathleen Bailey  
U.S. IOOS Glider Program Manager

John Kerfoot  
MARACOOS/Rutgers University



# History

- 2005-06: Navy funded Glider Technology Centers
- 200x: IOOS Regional Associations provide glider observations and worked to advance the technology.
- 2009: RU27: MARACOOS/Rutgers - Crossing the Atlantic
- 2012: Held first national glider meeting
- **2013: Established a National Glider Data Assembly Center (NGDAC)**
- 2014: Released a Glider Network White Paper
- 2015: Established an IOOC Glider Task team
- 2017: Established Underwater Glider User Group (UG2)
- 2019: Hosted International Glider Workshop

# National GDAC Overview

- Established in 2013
- Provides centralized data management functions that apply consistent data standards and best practices to achieve integration among glider observing assets
- Operational conduit that connects nonfederal glider data to assimilative operational models (Navy, NOAA)
- Part of the IOOS Certification process
- Open to all glider data providers!



# GDAC Services

- Provides a simple NetCDF file specification
- Provides operators a process for registering and submitting glider data
- Public access to glider data sets via existing web services and standards
- Automated QA/QC on core CTD variables
- Pathway to the GTS and to operational data-assimilative models
- Permanent data archive at NCEI
- Deployment tracking and visualization tool

IOOS Glider DAC v2

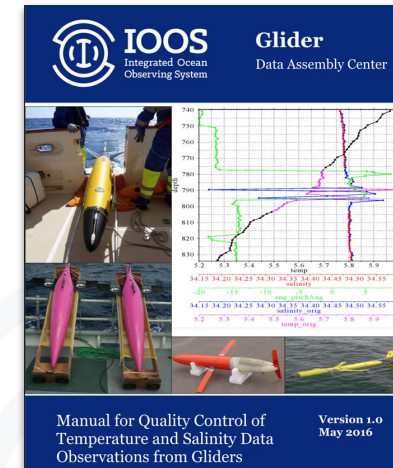
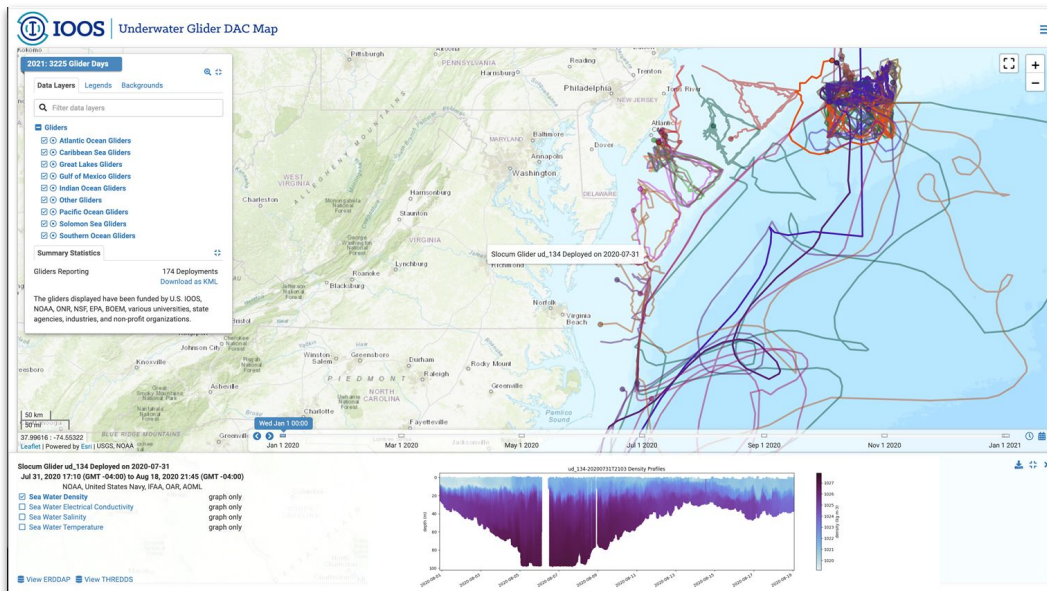
Deployment	WMO ID	Updated
Gichigami-20110629T1821	4801904	15 hours ago
Gichigami-20111229T109	4801904	15 hours ago
Howdy-20160629T2207	4801915	15 hours ago
Howdy-20160902T1836	4801915	15 hours ago
Murphy-20150809T1355Z	4801919	15 hours ago
Revelle-20160629T1744	4801938	15 hours ago
Sam-20160728T1899	4801942	15 hours ago
SG187-20150616T1034	None	15 hours ago
SG609-20140718T1700	48916	15 hours ago
SG609-20150206T1720	48916	15 hours ago
SG609-20150715T1350	48916	15 hours ago
SG609-20160310T1412	48916	15 hours ago
SG610-20140715T1400	48917	15 hours ago
SG610-20150206T1750	48917	15 hours ago
SG610-20150811T1630	48917	15 hours ago
Stommel-20150805T0002Z	4801916	15 hours ago

**At a Glance**

Deployments: 20  
Dives: 9

**Operators**

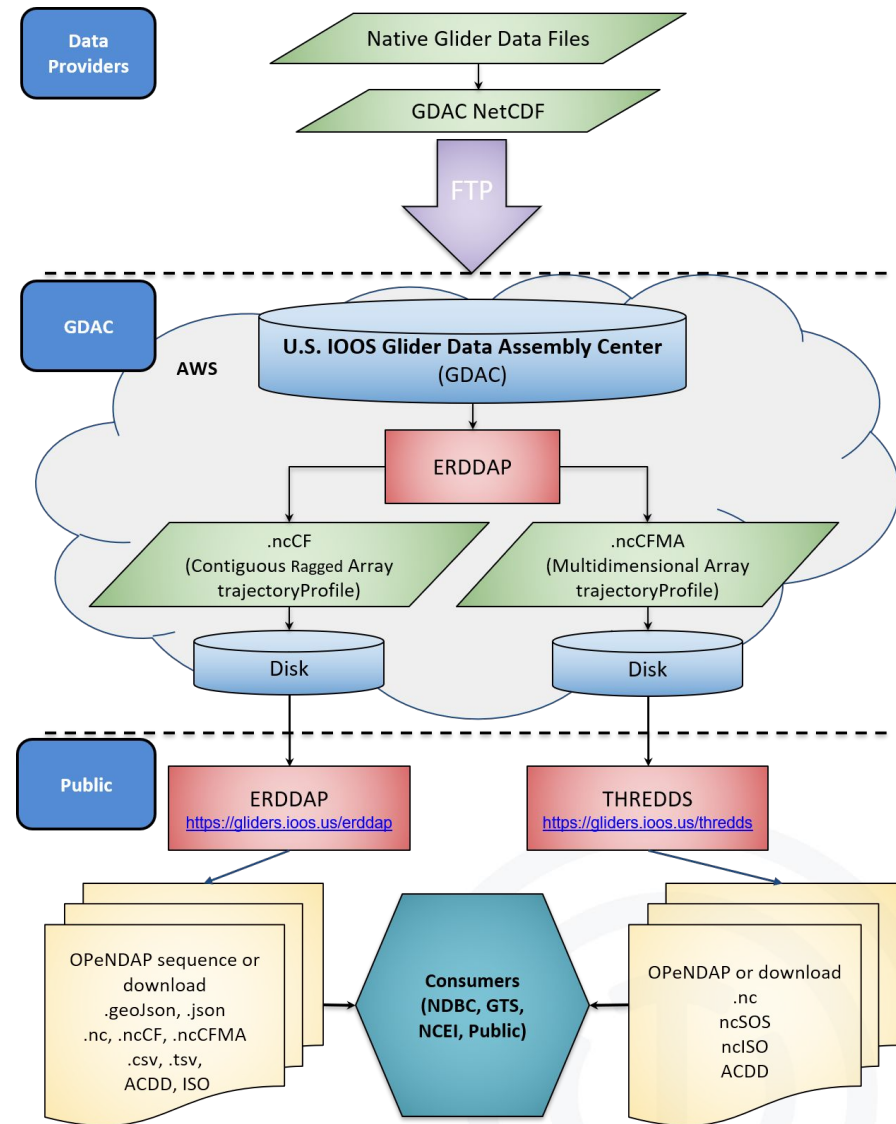
- Teledyne Webb Research Corporation (2 deployments)
- Oregon State University (1 deployment)
- CaNCOOS/MBARI/USCG (5 deployments)
- University of North Carolina Marine Sciences (1 deployment)
- Oregon State University (NANCOOS/CaNCOOS) (5 deployments)
- Atlantic Oceanographic and Meteorological Laboratory (AOML) (7 deployments)
- University of Alaska Fairbanks (1 deployment)
- Seiripis Institution of Oceanography (5 deployments)
- Skidaway Institute of Oceanography (1 deployment)
- GERG (5 deployments)





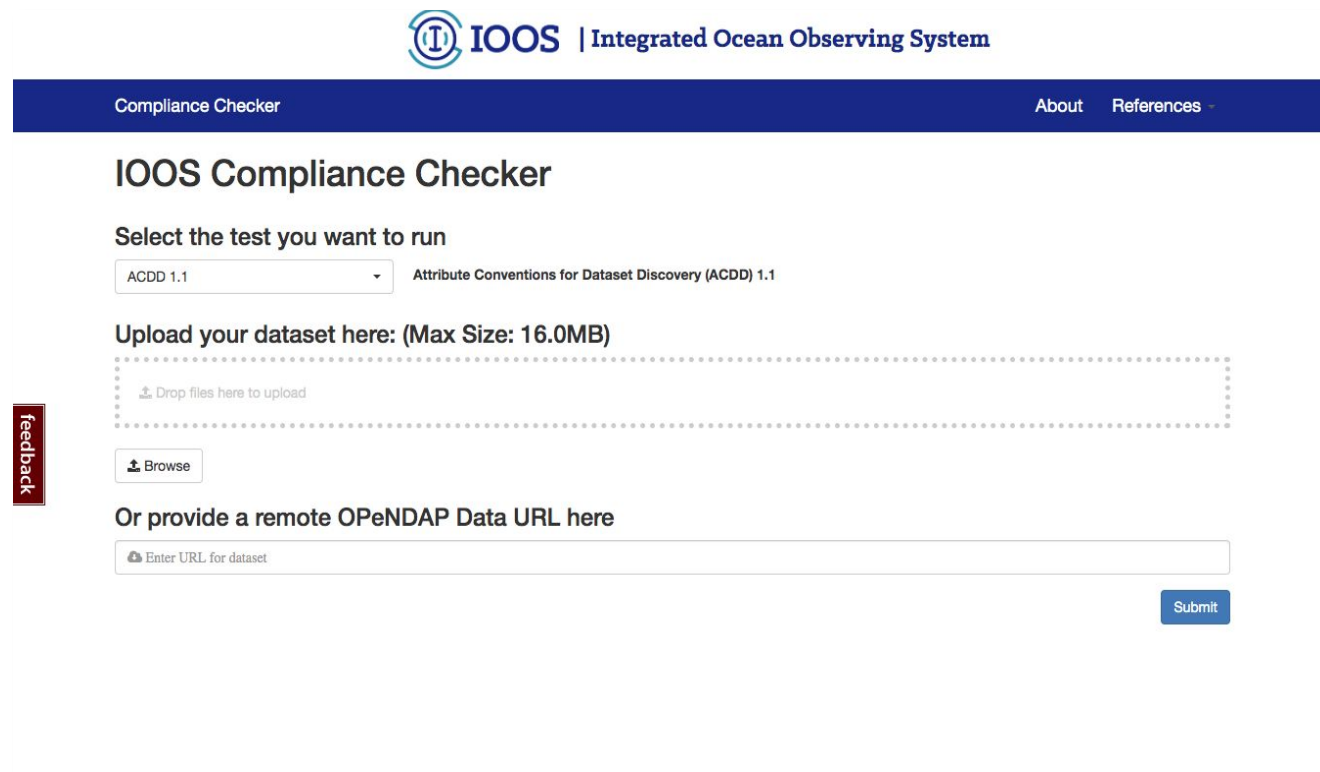
# Findable | Accessible | Interoperable | Reusable

- Based on community netCDF conventions: CF, ACDD, NCEI .nc template
- Controlled vocabularies
- Alignment with the IOOS Metadata Profile
  - Dataset attribution guidelines to help the US IOOS community publish datasets in netCDF and other related data formats in an interoperable manner
- ERDDAP, THREDDS - open, public access



## IOOS Compliance Checker

- Tool for data providers to check for completeness and community standard compliance of netCDF files against CF and ACDD file standards.
- Checks to help data providers submit the highest quality data to the Glider DAC.



The screenshot shows the IOOS Compliance Checker web interface. At the top, the IOOS logo and name are displayed. Below this is a navigation bar with 'Compliance Checker' and 'About References'. The main heading is 'IOOS Compliance Checker'. Underneath, there's a section 'Select the test you want to run' with a dropdown menu set to 'ACDD 1.1' and a label 'Attribute Conventions for Dataset Discovery (ACDD) 1.1'. The next section is 'Upload your dataset here: (Max Size: 16.0MB)', featuring a dashed box for file drops with the text 'Drop files here to upload' and a 'Browse' button. Below this is a section 'Or provide a remote OPeNDAP Data URL here' with a text input field labeled 'Enter URL for dataset' and a 'Submit' button. A vertical 'feedback' button is located on the left side of the form.

## OG1.0 Harmonization

- Harmonization of the glider data format across Data Assembly Centers, and conform to FAIR principles adopted by GOOS.
- New format (OG1.0) released
- U.S. IOOS Glider DAC will create and publish the OG1.0 data sets
- Implementation expected by 2023 - 2024



OceanGliders

# Be FAIR and CARE

## CARE Principles for Indigenous Data Governance

- Collective Benefit | Authority to Control | Responsibility | Ethics

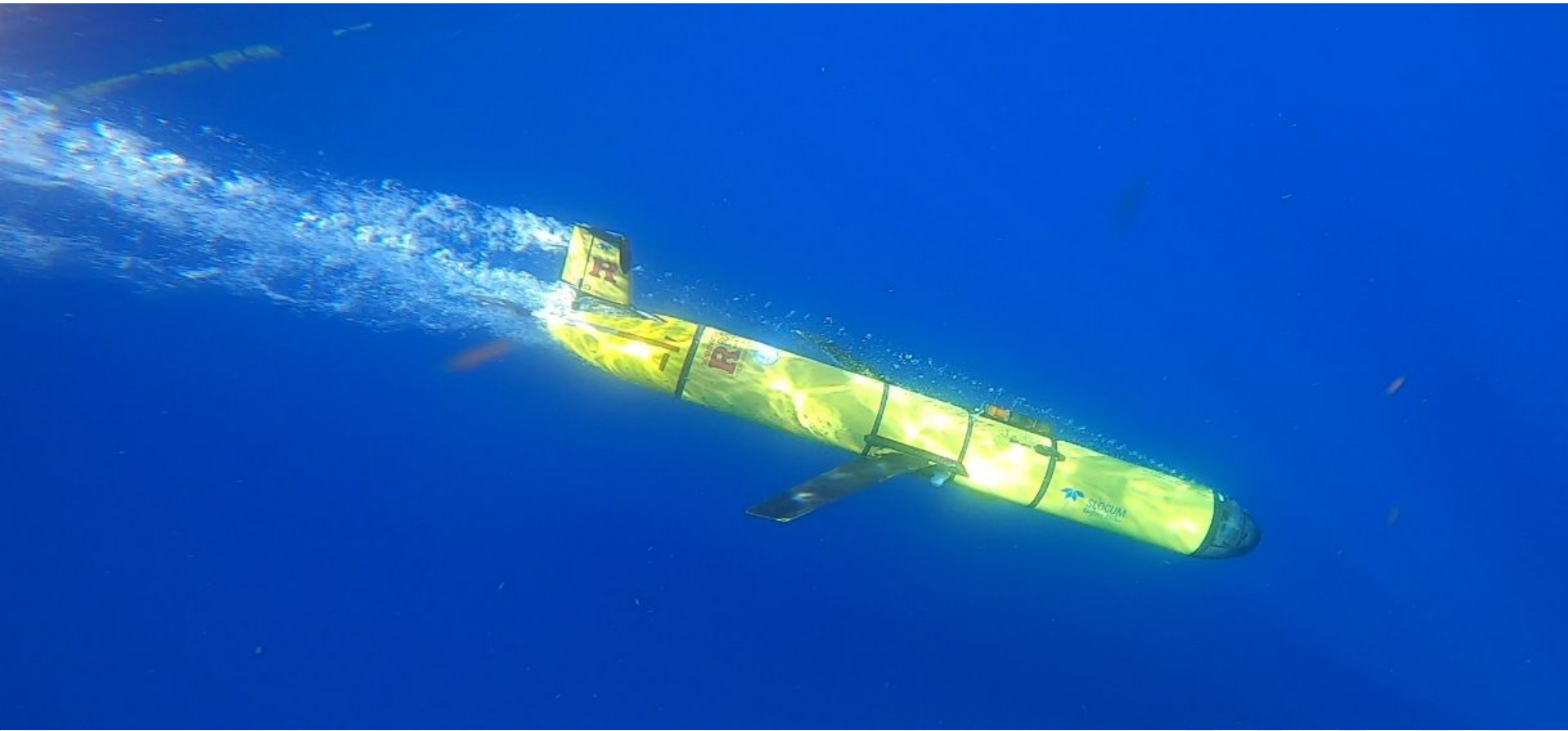
*The implementation of the CARE Principles in tandem with the FAIR Principles will result in data that reflect the realities of Indigenous Peoples, be useful for Indigenous purposes, and remain under Indigenous control, while promoting knowledge discovery and innovation*

*Just as the FAIR Principles are a precursor to good data management and stewardship practices, the CARE Principles encourage data users to be FAIR and CARE.*



# Thank you!

[kathleen.bailey@noaa.gov](mailto:kathleen.bailey@noaa.gov)



*Rutgers glider RU29; Credit: Dan Miehle*